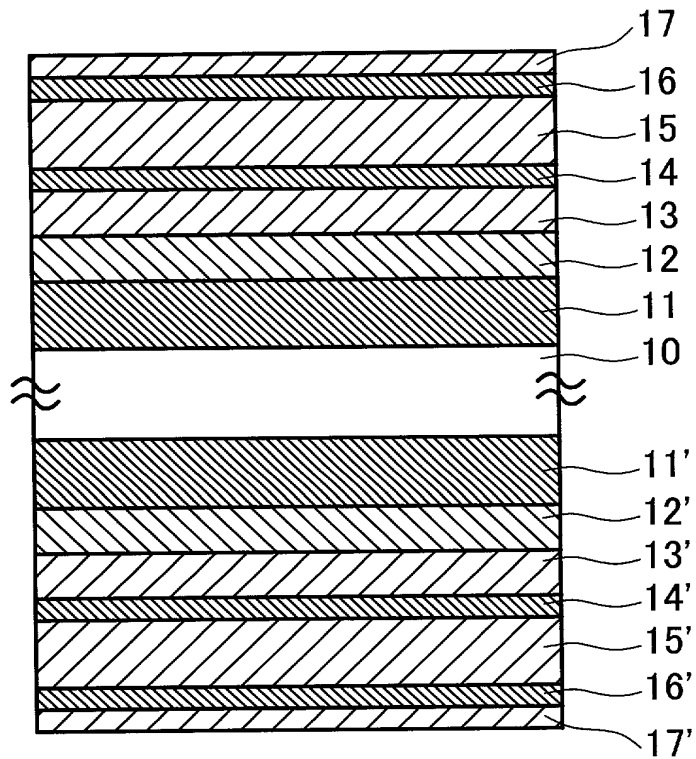
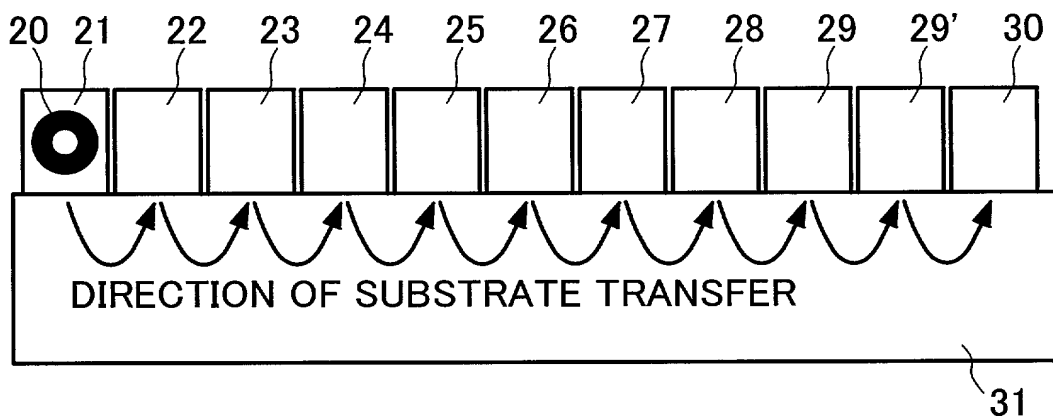


FIG.1



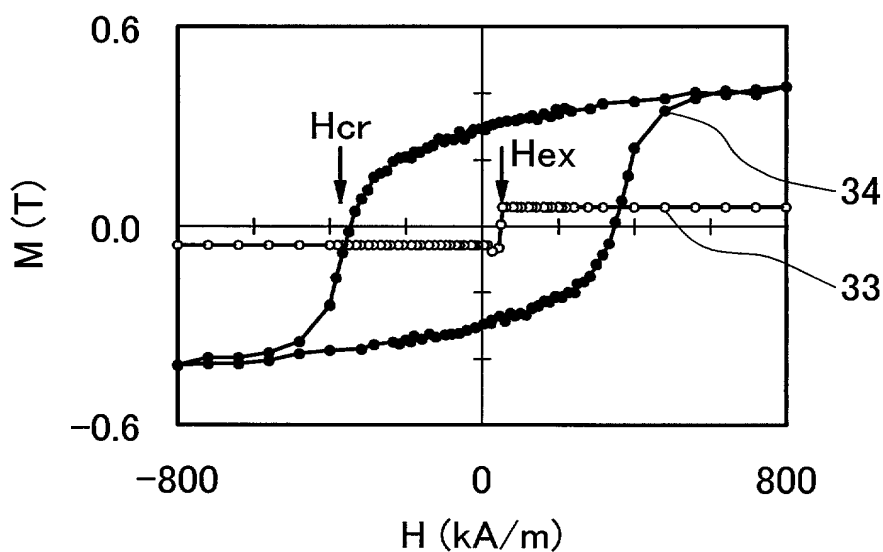
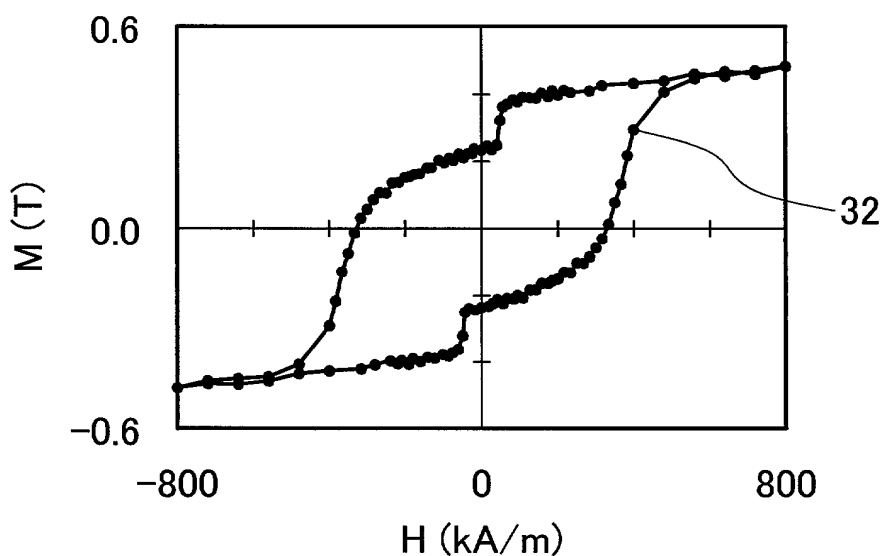
- 10 .....SUBSTRATE  
11,11'...SEED LAYER  
12,12'...UNDER LAYER  
13,13'...THE FIRST MAGNETIC LAYER  
14,14'...NON-MAGNETIC INTERMEDIATE LAYER  
15,15'...THE SECOND MAGNETIC LAYER  
16,16'...PROTECTIVE LAYER  
17,17'...LUBRICANT LAYER

FIG.2



- 20...SUBSTRATE
- 21...LOAD-LOCK CHAMBER
- 22...SEED LAYER FORMING CHAMBER
- 23...HEATING CHAMBER
- 24...UNDERLAYER FORMING CHAMBER
- 25...UNDERLAYER FORMING CHAMBER
- 26...MAGNETIC LAYER FORMING CHAMBER
- 27...NON-MAGNETIC INTERMEDIATE LAYER FORMING CHAMBER
- 28...MAGNETIC LAYER FORMING CHAMBER
- 29,29'...PROTECTIVE LAYER FORMING CHAMBER
- 30...UNLOAD-LOCK CHAMBER
- 31...MAIN CHAMBER

FIG.3

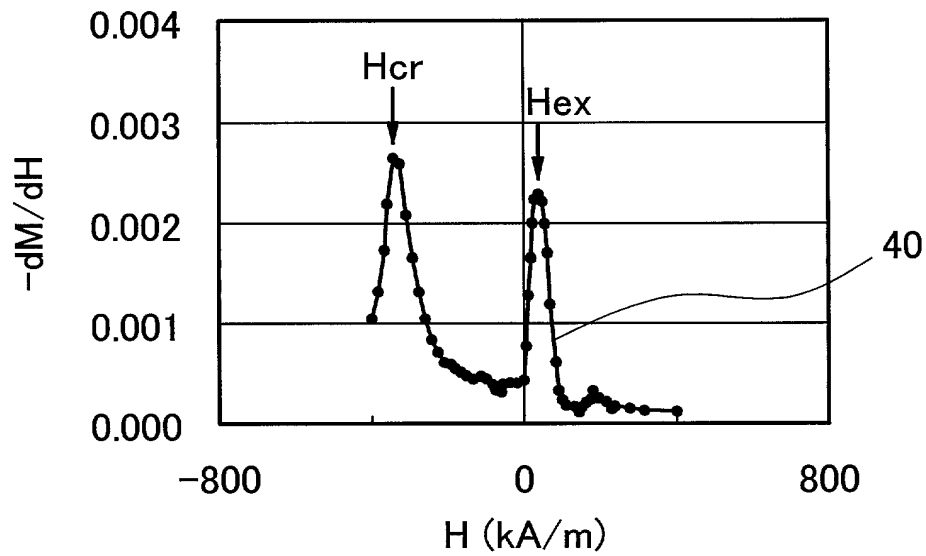


32...MAGNETIZATION CURVE

33...MAGNETIZATION CURVE OF THE FIRST MAGNETIC LAYER  
WHICH IS OBTAINED WITH THE MAGNETIZATION CURVE 32

34...MAGNETIZATION CURVE OF THE SECOND MAGNETIC LAYER  
WHICH IS OBTAINED WITH THE MAGNETIZATION CURVE 32

FIG.4



40...CURVE WHICH IS OBTAINED BY DIFFERENTIATING  
THE MAGNETIZATION M BY THE MAGNETIC FIELD  
H ON THE MAGNETIZATION CURVE 32

FIG.5

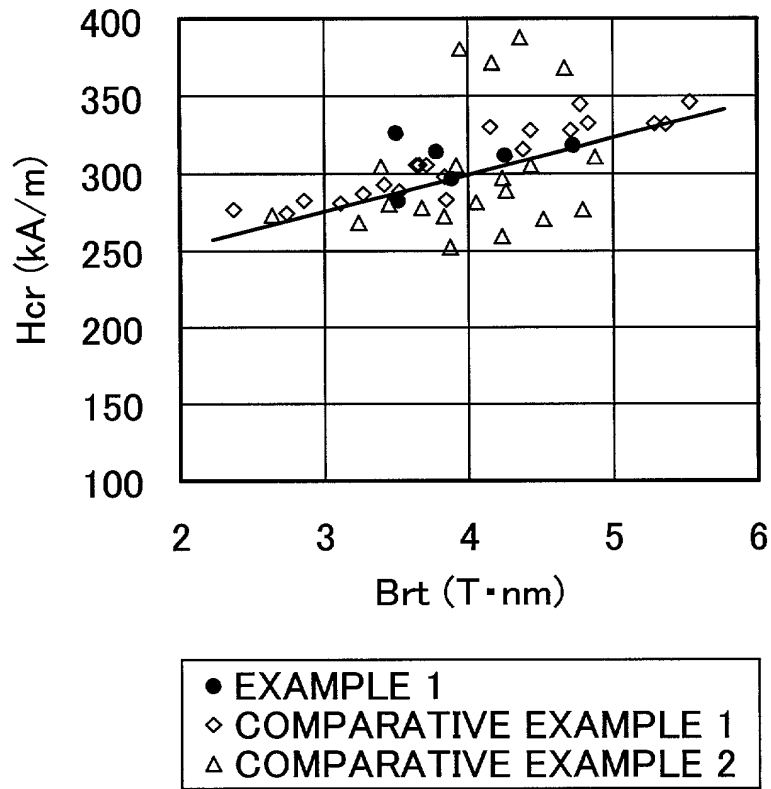


FIG.6

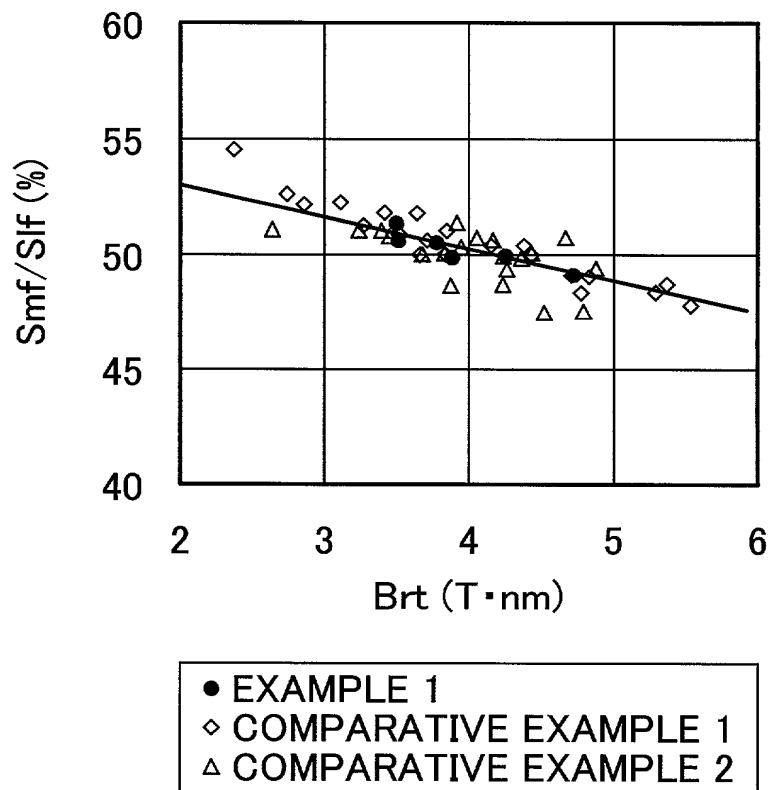


FIG.7

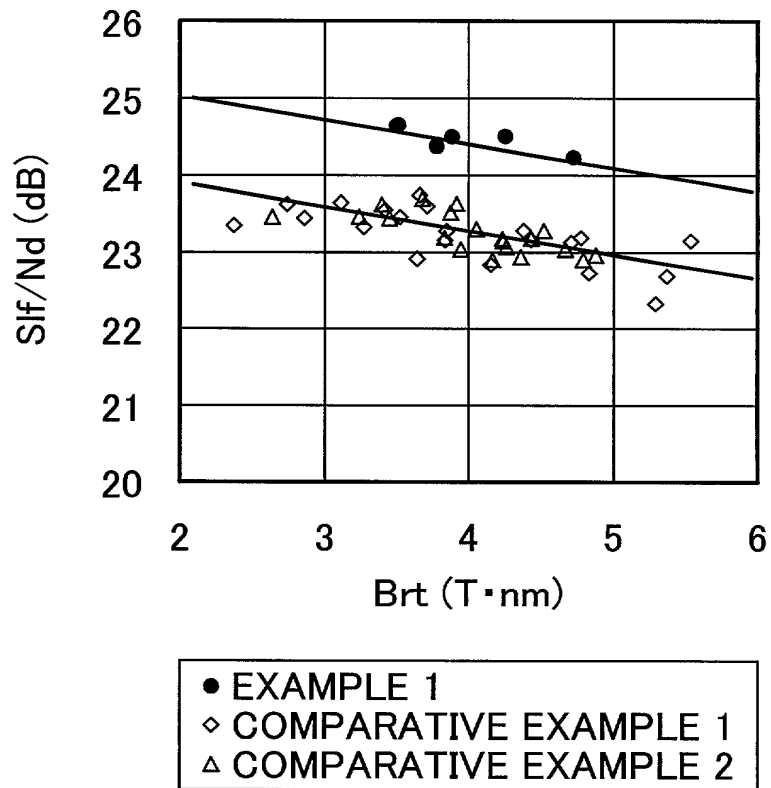


FIG.8

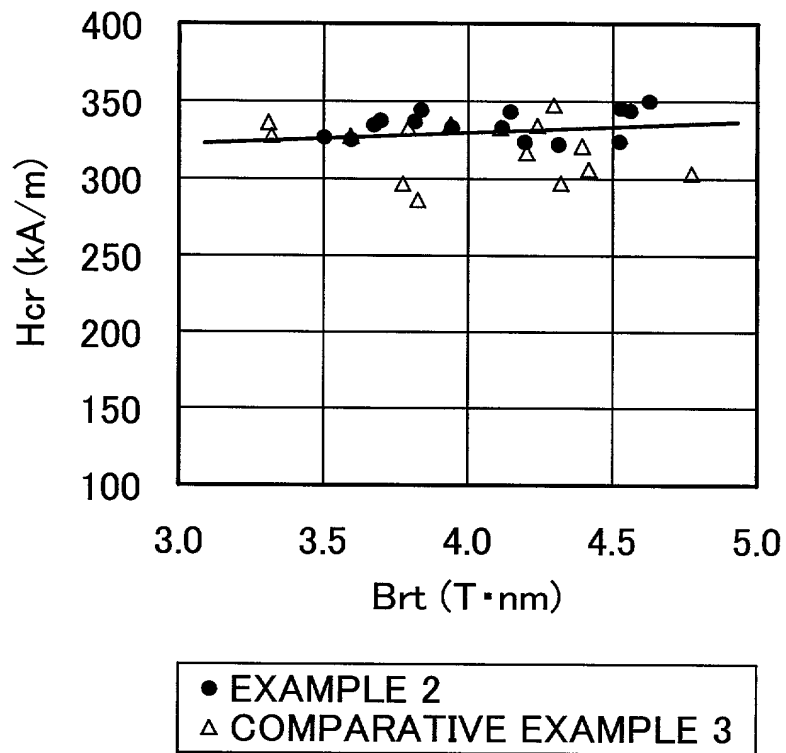




FIG.9

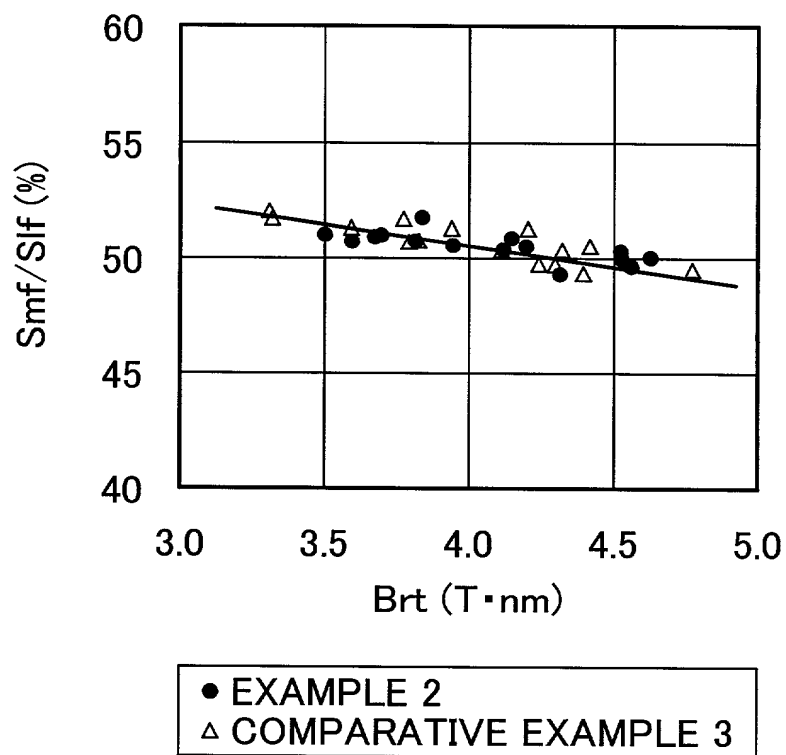


FIG.10

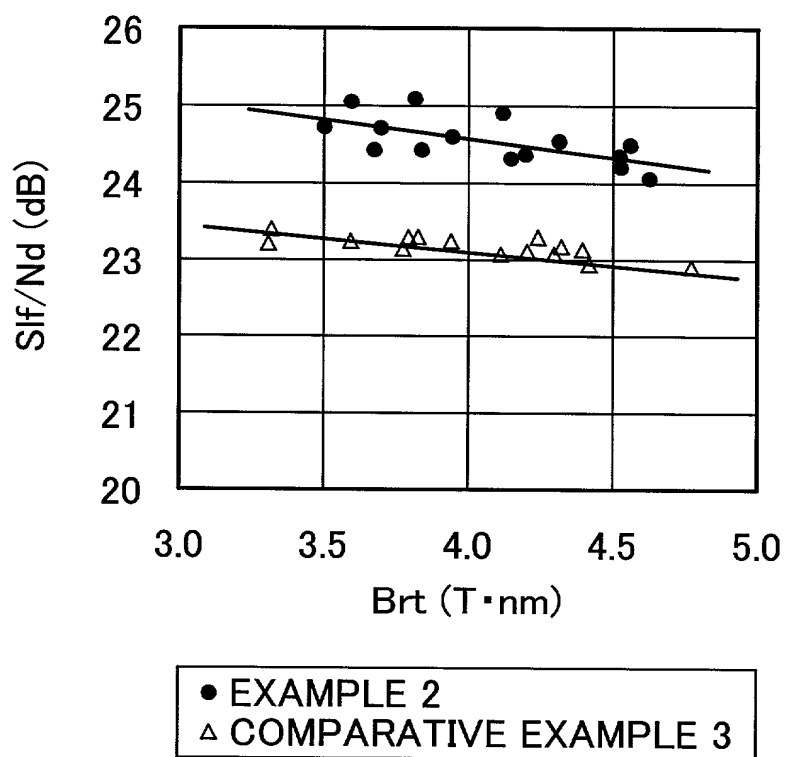


FIG.11

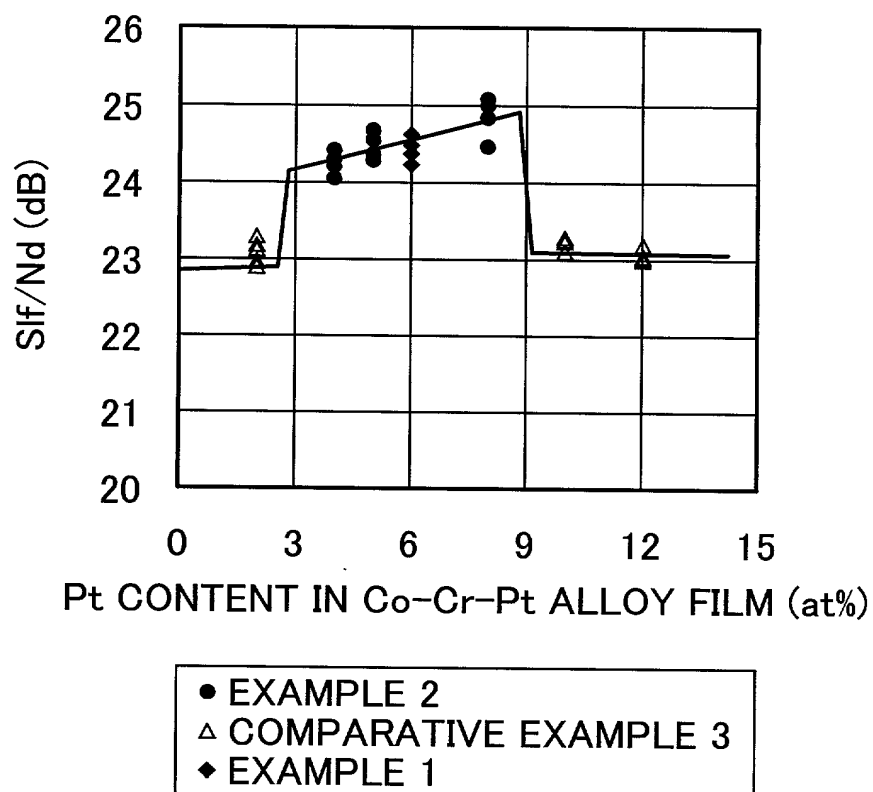


FIG.12

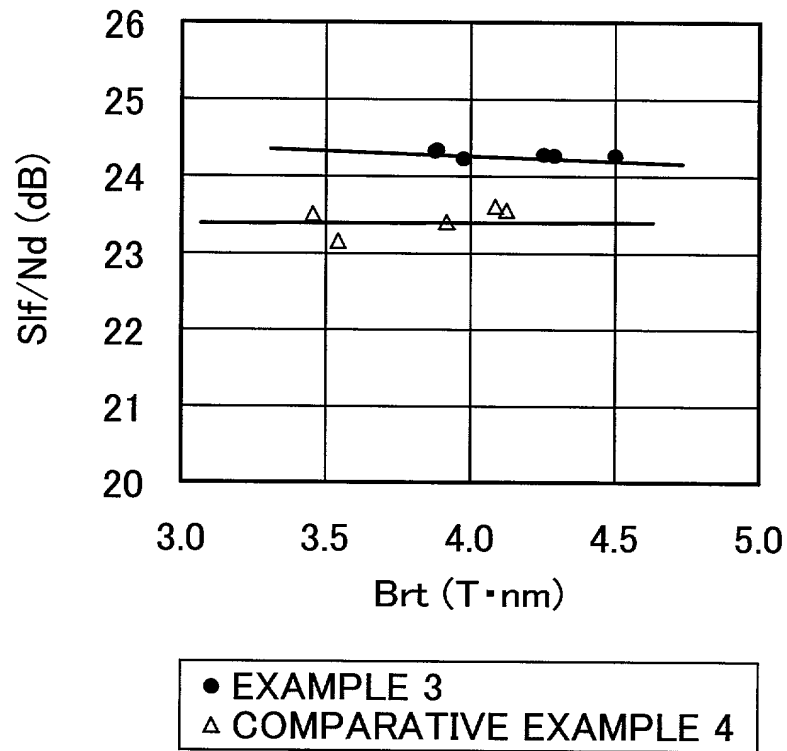


FIG.13

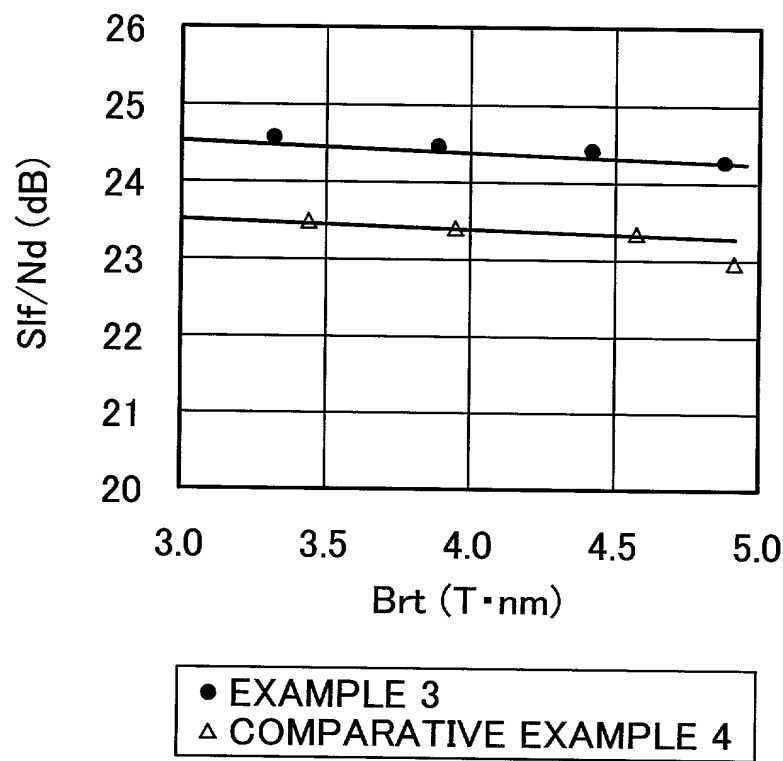


FIG.14

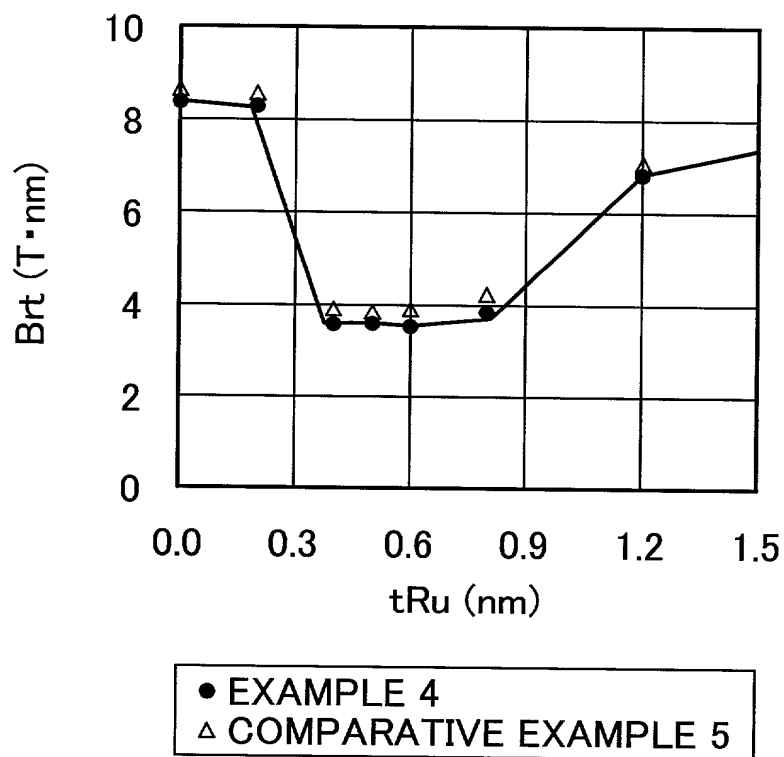
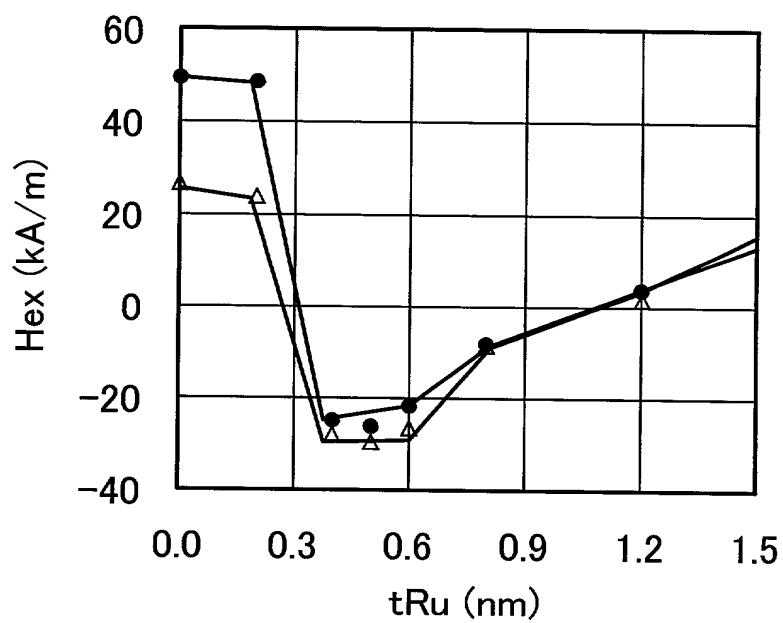


FIG.15



● EXAMPLE 4  
△ COMPARATIVE EXAMPLE 5

FIG.16

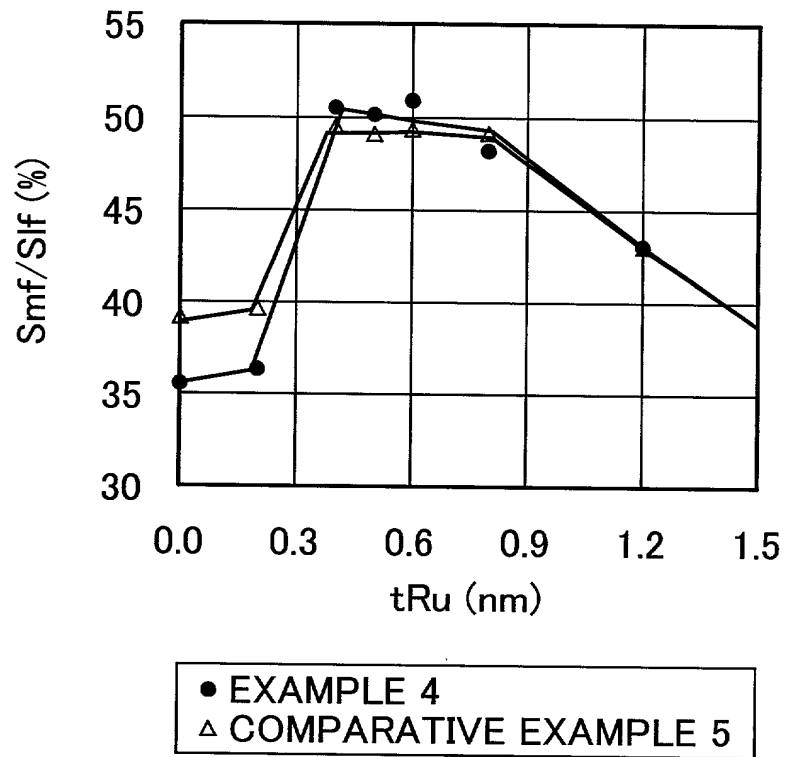




FIG.17

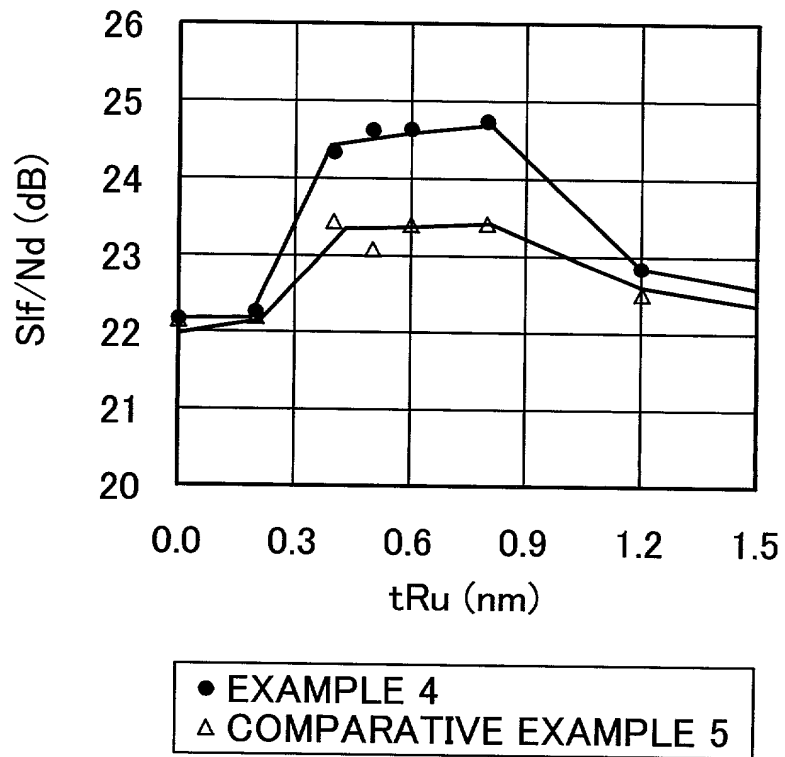


FIG.18

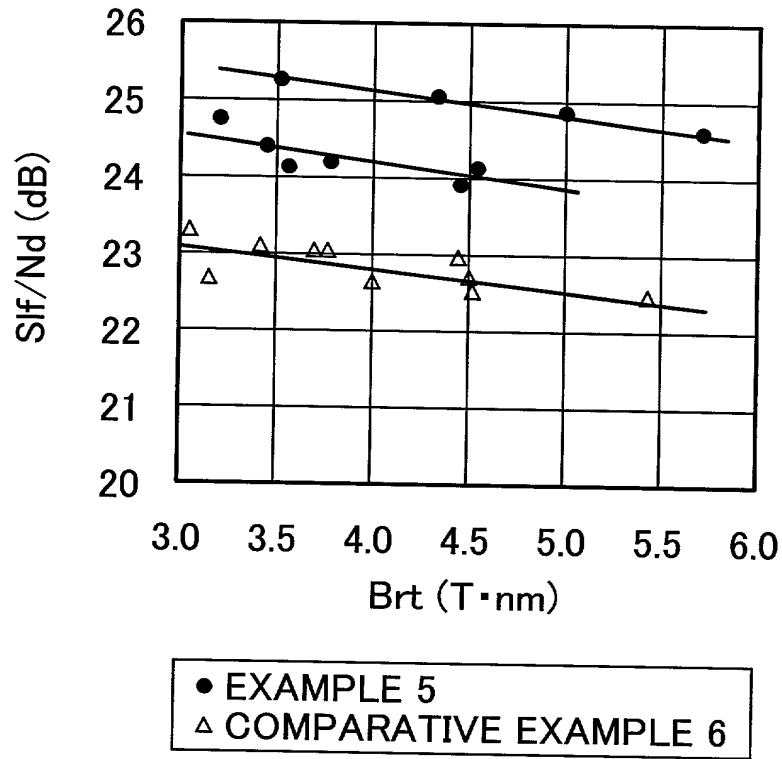
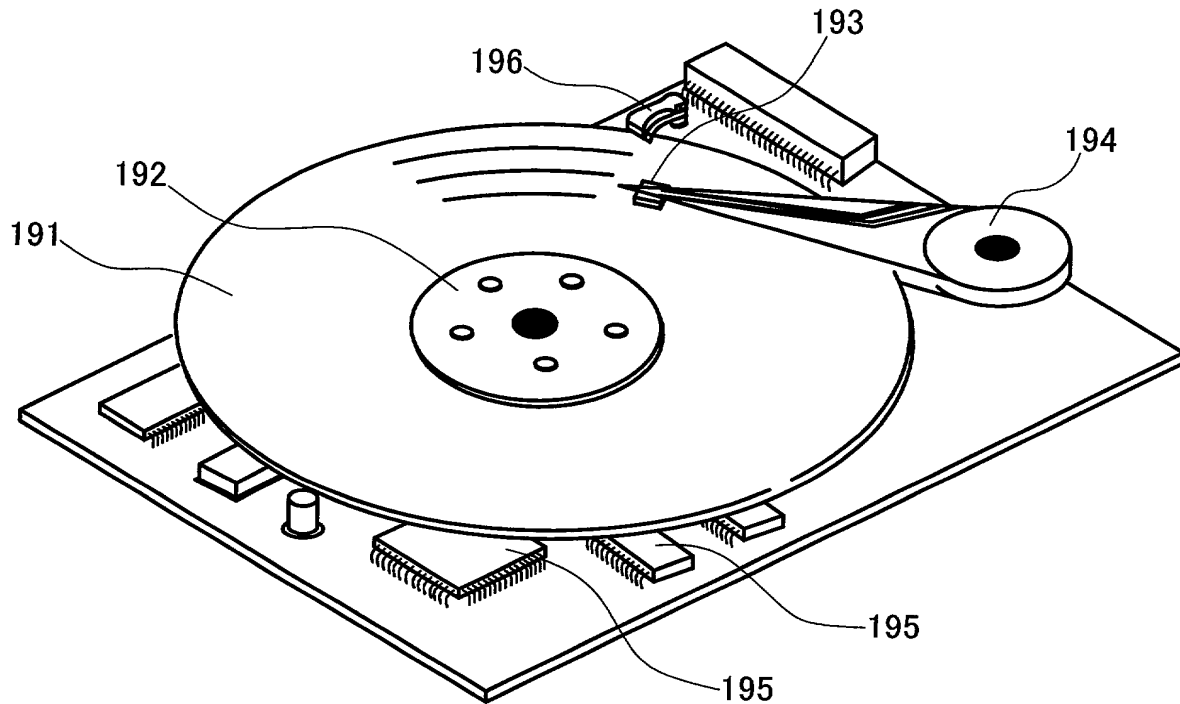
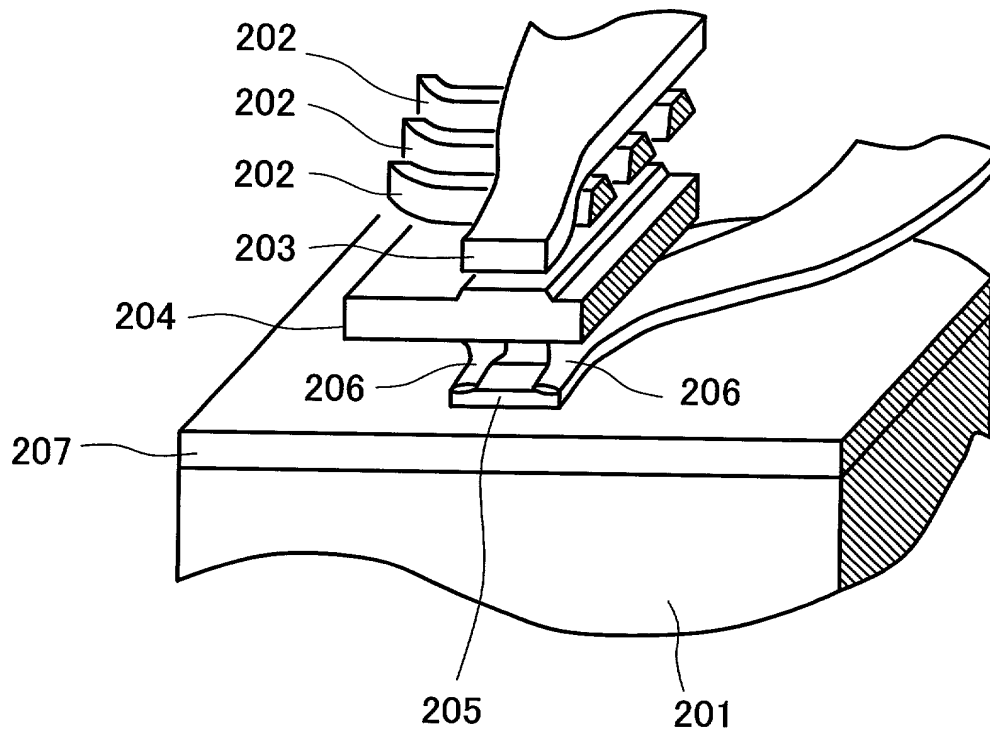


FIG.19



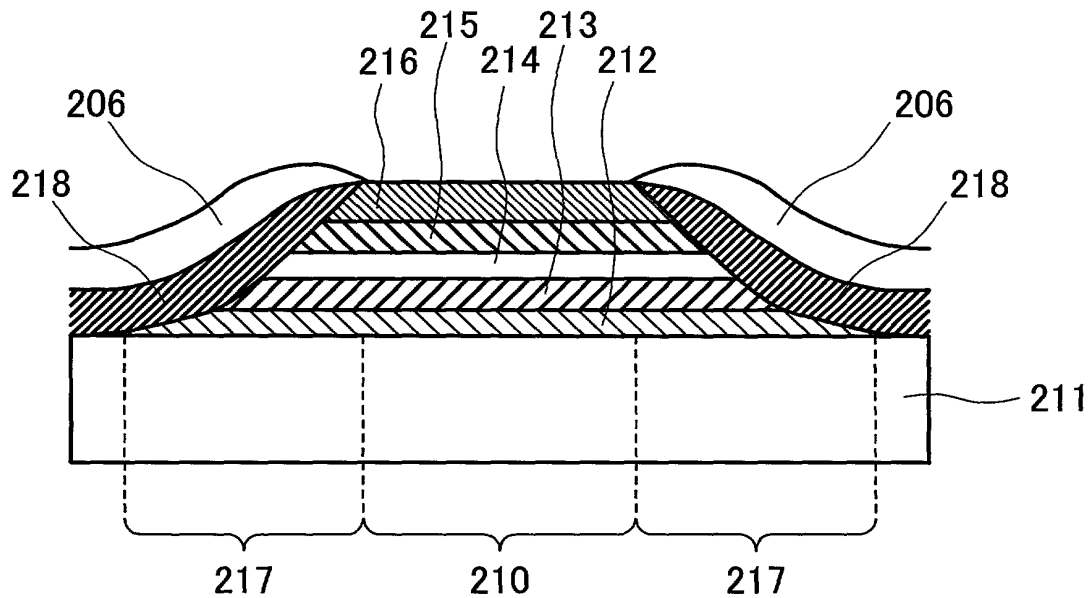
- 191...MAGNETIC RECORDING MEDIUM
- 192...DRIVING UNIT FOR ROTATING THE MAGNETIC RECORDING MEDIUM
- 193...MAGNETIC HEAD
- 194...HEAD ACCESS SYSTEM FOR DRIVING THE MAGNETIC HEAD
- 195...WRITE/READ SIGNAL PROCESSING MEANS
- 196...HEAD UNLOADING MECHANISM

FIG.20



- 201...SUBSTRATE  
202...COIL  
203...UPPER MAGNETIC POLE  
204...LOWER MAGNETIC POLE/UPPER SHIELD LAYER  
205...MAGNETORESISTIVE SENSOR  
206...ELECTRODE PATTERN  
207...LOWER SHIELD LAYER

FIG.21



- 210...SIGNAL SENSING REGION
- 211...GAP LAYER
- 212...Ta BUFFER LAYER
- 213...FIRST MAGNETIC LAYER
- 214...INTERMEDIATE LAYER
- 215...SECOND MAGNETIC LAYER
- 216...ANTIFERROMAGNETIC ALLOY LAYER
- 217...TAPERED PORTION
- 218...PERMANENT MAGNETIC LAYER